

Notice of Allowability

Application No.

10/689,057

Applicant(s)

BRUCKER, CHARLES F.

Examiner

Art Unit

Rodney G. McDonald

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed June 5, 2007.
2. ☒ The allowed claim(s) is/are 1-7, 9-18 and 20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


RODNEY G. MCDONALD
PRIMARY EXAMINER

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

Claims 1-4, 10 and 11 are allowable over the prior art of record because the prior art of record does not teach an apparatus including said gas supply means adapted for sequentially supplying a plurality of different bursts of gas to the chamber for rapidly establishing a respective plurality of preselected gas pressures in the chamber, the gas supply means including a plurality of burst ballasts fluidly connected to the supply ballast via respective metering valves, and a corresponding plurality of on/off valves fluidly connected to respective ones of the plurality of burst ballasts and the chamber for supplying the process chamber with the gas from a selected one of the plurality of burst ballasts.

Claims 5-7 are allowable over the prior art of record because the prior art of record does not teach an apparatus comprising:

- (a) a chamber defining an interior space adapted to be maintained at a reduced pressure; and
- (b) a gas supply means for supplying at least one burst of gas to said chamber for rapidly establishing at least one preselected gas pressure in said chamber, said gas supply means including:
 - (i) a source of said gas;
 - (ii) a supply ballast fluidly connected to said gas source for receiving said gas from said source;
 - (iii) at least one burst ballast fluidly connected to said supply ballast via a metering valve

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for receiving said gas from said supply ballast; and

(iv) an on/off valve fluidly connected to said at least one burst ballast and said chamber for supplying said process chamber with said gas from said at least one burst ballast wherein: said chamber includes means for performing at least one thin film deposition process on said at least one substrate/workpiece.

Claim 9 is allowable over the prior art of record because the prior art of record does not teach an apparatus wherein the gas supply means is adapted for sequentially supplying first and second bursts of gas to said chamber for rapidly establishing respective first and second preselected gas pressures in said chamber, said gas supply means comprising first and second burst ballasts fluidly connected to said supply ballast *via* respective first and second metering valves, and first and second on/off valves respectively fluidly connected to said first and second burst ballasts and said chamber for supplying said process chamber with said gas from a selected one of said first and second burst ballasts.

Claims 12-15 are allowable over the prior art of record because the prior art of record does not teach the method, including steps for rapidly establishing at least one preselected gas pressure in a reduced pressure chamber including wherein: step (a) comprises providing a gas supply means adapted for sequentially supplying plurality of different bursts of gas to said chamber for rapidly establishing a respective plurality of preselected gas pressures in said chamber, said gas supply means including a plurality of burst ballasts fluidly connected to said supply ballast *via* respective metering valves, and a corresponding plurality of on/off valves fluidly connected to respective

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ones of said plurality of burst ballasts and said chamber for supplying said process chamber with said gas from a selected one of said plurality of burst ballasts.

Claims 16-18 are allowable over the prior art of record because the prior art of record does not teach the method, including steps for rapidly establishing at least one preselected gas pressure in a reduced pressure chamber, comprising steps of

(a) providing an apparatus comprising:

(i) a chamber defining an interior space adapted to be maintained at a reduced pressure; and

(ii) a gas supply means for supplying at least one burst of gas to said chamber for rapidly establishing at least one preselected gas pressure in said chamber, said gas supply means including:

(1) a source of said gas;

(2) a supply ballast fluidly connected to said gas source for receiving said gas from said source;

(3) at least one burst ballast fluidly connected to said supply ballast via a metering valve for receiving said gas from said supply ballast; and

(4) an on/off valve fluidly connected to said at least one burst ballast and said chamber for supplying said process chamber with said gas from said at least one burst ballast

(b) providing said supply ballast with said gas from said source;

(c) providing said at least one burst ballast with said gas from said supply ballast;

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(d) providing said chamber with a burst of said gas from said at least one burst ballast to establish said at least one preselected gas pressure in said chamber; and

(e) providing a steady flow of said gas from said at least one burst ballast to said chamber to maintain said at least one preselected gas pressure therein, wherein:

step (a) comprises providing a process chamber including means for performing at least one thin film deposition process on said at least one substrate/workpiece.

Claim 20 is allowable over the prior art of record because the prior art of record does not teach a method, including steps for rapidly establishing at least one preselected gas pressure in a reduced pressure chamber, including wherein step (a) comprises providing a gas supply means adapted for sequentially supplying first and second bursts of gas to said chamber for rapidly establishing respective first and second preselected gas pressures in said chamber, said gas supply means, comprising first and second burst ballasts fluidly connected to said supply ballast *via* respective first and second metering valves, and first and second on/off valves respectively fluidly connected to said first and second burst ballasts and said chamber for supplying said process chamber with said gas from a selected one of said first and second burst ballasts.

The closest prior art of record to Adams (U.S. Pat. 5,879,461) fails to teach an apparatus and method that has a gas supply means for sequentially supplying the bursts of gas to the chamber in order to control pressure utilizing Applicant claimed

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means. Nor does Adams teach the means as Applicant claims for supplying the gas to film deposition chamber.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M-TH with every Friday off..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Rodney G. McDonald
Primary Examiner
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RM
August 13, 2007